

REMARKS

Claims 1-6 and 12-21 are pending in this application. By this Amendment, Applicants have amended claims 1, 3 and 21, deleted claim 17 and added new claims 22-25. Applicants respectfully submit that no new matter was added by this Amendment. Accordingly, claims 1-6 and 12-16 and 18-25 are at issue.

The Examiner rejected claims 3 and 17 under 35 U.S.C. §112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this rejection.

Applicants have amended claim 3 to require the “fibers” in claim 1 to be “carbon” fibers and has removed all reference to “nylon, and polyester” fibers. Applicants have deleted claim 17. Applicants have included the limitation of the “pre-preg” in claim 17 as a part or component of a “system” for in-situ repair of a conduit in new claim 22. The system includes the pre-preg and the apparatus for placing and curing the pre-preg in a conduit. In view of the Amendment to claim 3 and the deletion of claim 17, Applicants respectfully submit the above rejection is moot.

The Examiner has rejected claims 1, 3-6 and 21 under 35 U.S.C. §102(b) as being anticipated by, or, in the alternative, under 35 U.S.C. §103(a) as obvious over Davis et al. Applicants respectfully traverse this rejection.

Applicants have amended claim 1 to require the further limitation of “electrical cable lines connecting the electrically conductive fibers in the generally cylindrical body to an electrical energy source for providing electrical energy to the electrically conductive fibers to resistively heat the electrically conductive fibers.” As acknowledged by the Examiner on page 4 of the Office Action of December 5, 2002, such cables and electrical energy source are “not shown in Davis et al.” Moreover, there is no suggestion in Davis et al., or the prior art to modify Davis et al., to require the limitations added to claim 1.

Accordingly, Applicants respectfully maintain that claim 1 is not anticipated by or obvious in view of Davis et al., and is patentable over this reference. Claims 3-6 depend on claim 1 and include each of its limitations. Accordingly, Applicants respectfully maintain that claims 3-6 are also patentable over Davis et al.

Applicants have similarly amended Claim 21 to require the further limitation of “electrical cable lines connecting the carbon fibers in the generally cylindrical body to an electrical energy source for providing electrical energy to the carbon fibers to resistively heat the carbon fibers.” Accordingly, for the reasons given above with respect to claim 1, Applicants respectfully maintain that claim 21 is not anticipated by or obvious in view of Davis et al., and is patentable over this reference.

The Examiner has rejected claim 2 under 35 U.S.C. §103(a) as being unpatentable over Davis et al., in view of Europe ‘761, Guenther et al., or Rianda. Applicants respectfully traverse this rejection.

For the reasons given above, Applicants respectfully maintain that claim 1 is patentable over Davis et al. Neither Europe ‘761, Guenther et al. nor Rianda show or suggest electrical cables connecting electrically conductive fibers in a cylindrical body to an electrical energy source. Accordingly, Applicants respectfully maintain that claim 1 is patentable over the combination of Davis et al. with Europe ‘761, Guenther et al., or Rianda. Claim 2 depends on claim 1 and includes each of its limitations. Accordingly, Applicants respectfully maintain that claim 2 is patentable over these references.

The Examiner has rejected claims 1-6, 12-19 and 21 under 35 U.S.C. §103(a) as being unpatentable over Barton in view of Japan ‘323 and Japan ‘334 and one of Wood et al., Davis et al., Hollingsworth and Guenther et al., and optionally further in view of at least one of PCT (WO 93/06410), Rankin and Baker. Applicants respectfully traverse this rejection.

As an initial point, Applicants maintain that the combination of numerous references in this rejection is based improperly on hindsight reconstruction. The Examiner has taken isolated features from the cited references, and has used the claims of the present application as a template. Such hindsight reconstruction is improper. It is well-recognized that the claimed invention cannot be used as an instruction manual or template to piece together the teachings of the prior art in an attempt to render the claimed device obvious. In re Fritch, 972 F.2d 1260, 1266 (Fed. Cir. 1992); Fine, 837 F.2d at 1075 (“one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”).

Contrary to the Examiner's position, there is no incentive in the prior art to combine Barton with the other cited references, especially Japan '323 and Japan '334. Barton is directed only to a bladder that positions a pre-preg in a conduit and expands the pre-preg to hold it against the wall until it cures. Barton, in accord with the prior methods for curing such pre-pregs, discloses "pumping hot air" into the bladder to accelerate the cure. (Barton, col. 5, lines 25-27). Barton is not concerned with other methods for heating the bladder.

Japan '323 and Japan '334 fail to disclose the "cylindrical body" having the further limitations of claim 1, or the "apparatus" having the further limitations of claim 12. Further there is no disclosure of "nonmetallic, electrically conductive fibers" in either Japanese reference. In fact, Japan '334 specifically requires use of a "metallic tape 8." Such metallic conductors would not be as robust as the nonmetallic fibers of the present invention, resulting in a possible breakage upon multiple uses which would open the circuit and eliminate the ability of the tape to resistively heat.

The fact that the Japanese references "are in the same field of endeavor as Barton," (Office Action, p. 6) does not by itself provide an incentive to pick and choose features in the references to create the claimed invention. There must be some teaching or incentive to make the combination suggested by the Examiner. Moreover, that teaching or incentive cannot be found by looking at the claimed invention.

Combining the Japanese references with Barton would completely change the nature and construction of the device in Barton. Japan '323's expression of "an increase in work efficiency (uniform cure) and reduction of cost" is not a motivation to modify and completely change the device in Barton. In other words, Japan '323 does not provide any incentive or motivation to incorporate certain of its features in other devices.

Accordingly, Applicants respectfully submit that claims 1-6, 12-19, and 21 are patentable over Barton in view of Japan '323 and Japan '334 and one of Wood et al., Davis et al., Hollingsworth and Guenther et al., and optionally further in view of at least one of PCT (WO 93/06410), Rankin and Baker.

The Examiner has rejected claims 17 and 20 under 35 U.S.C. §103(a) as being unpatentable over Barton in view of Japan '323 and Japan '334 and one of Wood et al., Davis et al.,

Hollingsworth and Guenther et al., and optionally further in view of at least one of PCT (WO 93/06410), Rankin and Baker, and further in view of Lippiatt. Applicants respectfully traverse this rejection.

The Applicants have deleted claim 17. With respect to claim 20, Applicants respectfully maintain that the combination of Barton with the other cited references is improper hindsight reconstruction as argued above. Accordingly, Applicants respectfully maintain that claim 20 is patentable over Barton in view of Japan '323 and Japan '334 and one of Wood et al., Davis et al., Hollingsworth and Guenther et al., and optionally further in view of at least one of PCT (WO 93/06410), Rankin and Baker, and further in view of Lippiatt.

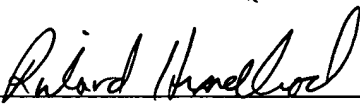
Applicants respectfully maintain that new claims 22-25 are patentable over the cited art.

CONCLUSION

In light of the foregoing Amendment and Remarks, Applicants respectfully request reconsideration and allowance of claims 1-6, 12-16 and 18-22, and consideration and allowance of claims 23-25.

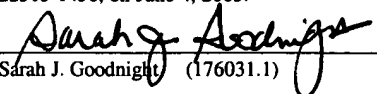
Respectfully submitted,

Date: June 4, 2003

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is, on the date shown below, being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: MAIL STOP FEE AMENDMENT, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on June 4, 2003.


Sarah J. Goodnight (176031.1)



ATTACHMENT A - Marked-Up Claims

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TECHNOLOGY CENTER R3700

1. (Twice Amended) An inflatable heating device comprising:

a generally cylindrical body having an inner surface and an outer surface, said body including a flexible matrix and a plurality of nonmetallic, electrically conductive fibers embedded within said flexible matrix, said flexible matrix being cured to a stable elastomeric state by electrical resistive heating of said fibers, said body being capable of expanding and returning to an original form, and electrical cable lines connecting the electrically conductive fibers in the generally cylindrical body to an electrical energy source for providing electrical energy to the electrically conductive fibers to resistively heat the electrically conductive fibers.

3. (Twice Amended) The inflatable heating device of claim 1 wherein said fibers are carbon fibers [comprise one or more materials selected from the group consisting of carbon, nylon, and polyester].

21. (Amended) An inflatable heating device comprising:

a generally cylindrical body having an inner surface and an outer surface, said body comprising a thermoset resin matrix and a plurality of carbon fibers embedded within said matrix, said carbon fibers being arranged helically and positioned at an angle of $\pm 45^\circ$ with respect to the longitudinal axis of said body, said matrix being cured to a stable elastomeric state by electrical resistive heating of said carbon fibers, said body being capable of expanding and returning to an original form, and electrical cable lines connecting the carbon fibers in the generally cylindrical body to an electrical energy source for providing electrical energy to the carbon fibers to resistively heat the carbon fibers.

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